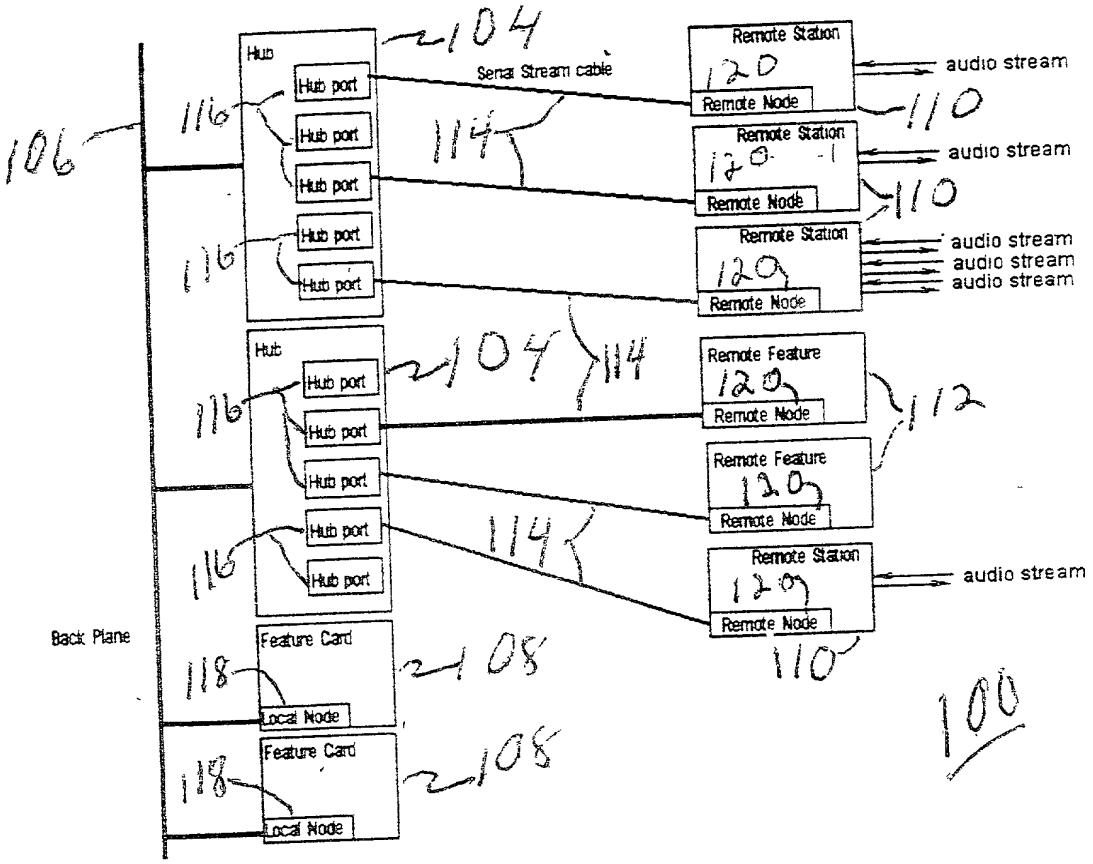

Hub
Hub port
Hub port
Hub port
Hub port
Hub port
Hub
Hub port
Hub port
Hub port
Hub port
Hub port
Back Plane
Feature Card
Local Node
Feature Card
Local Node
Serial Stream cable
Remote Station
120
Remote Node
Remote Station
120
Remote Node
Remote Station
120
Remote Node
Remote Feature
120
Remote Node
Remote Feature
120
Remote Node
Remote Station
120
Remote Node
audio stream
audio stream
audio stream
audio stream
audio stream
106
116
116
116
114
114
104
104
112
118
118
108
108
110
110
100

Fig. 1

Torasp attached

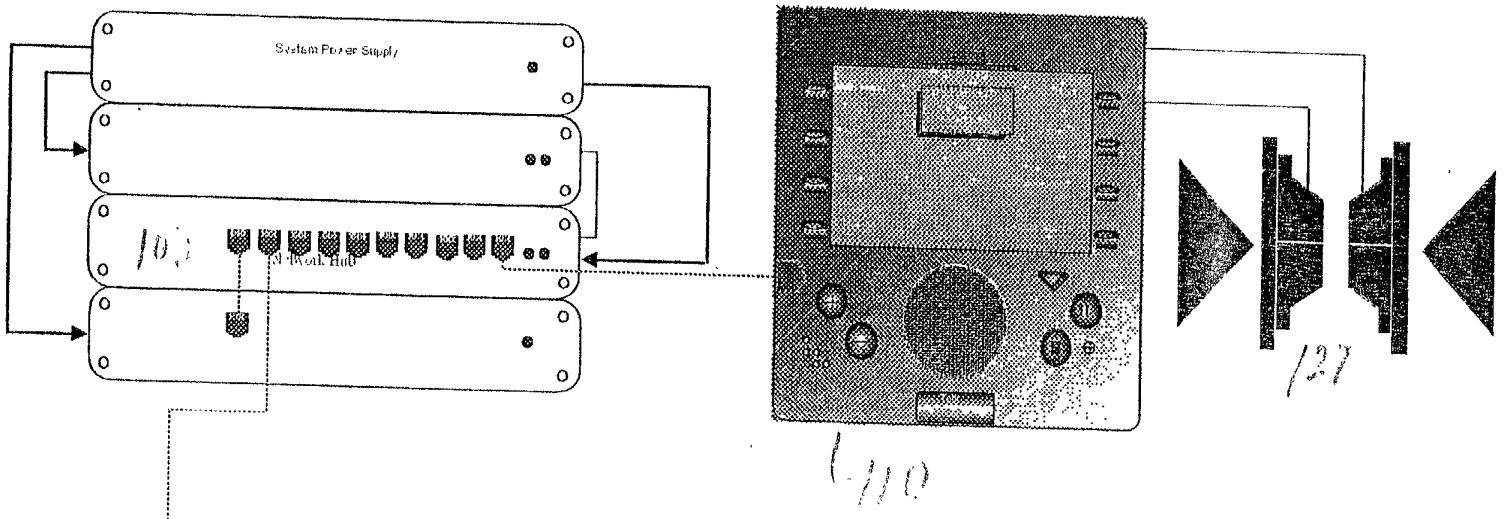
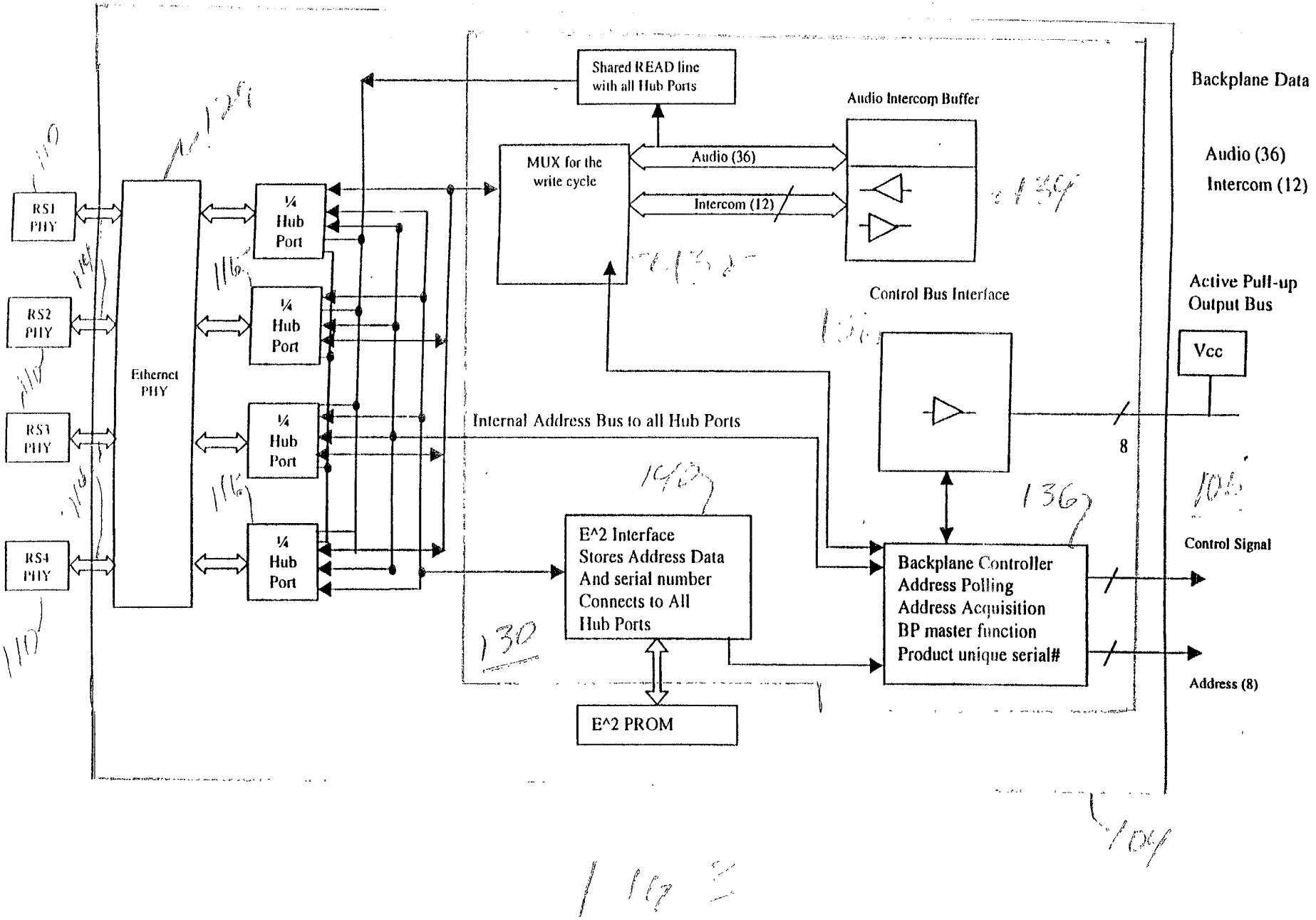


FIG. 2


RS1 PHY
RS2 PHY
RS3 PHY
RS4 PHY
Ethernet PHY
¼ Hub Port
¼ Hub Port
¼ Hub Port
¼ Hub Port
Shared READ line with all Hub Ports
MUX for the write cycle
Audio (36)
Intercom (12)
Audio Intercom Buffer
Control Bus Interface
Internal Address Bus to all Hub Ports
E^2 Interface Stores Address Data And serial number Connects to All Hub Ports
E^2 PROM
Backplane Controller Address Polling Address Acquisition BP master function Product unique serial#
8
Vcc
Backplane Data
Audio (36)
Intercom (12)
Active Pull-up Output Bus
Control Signal
Address (8)

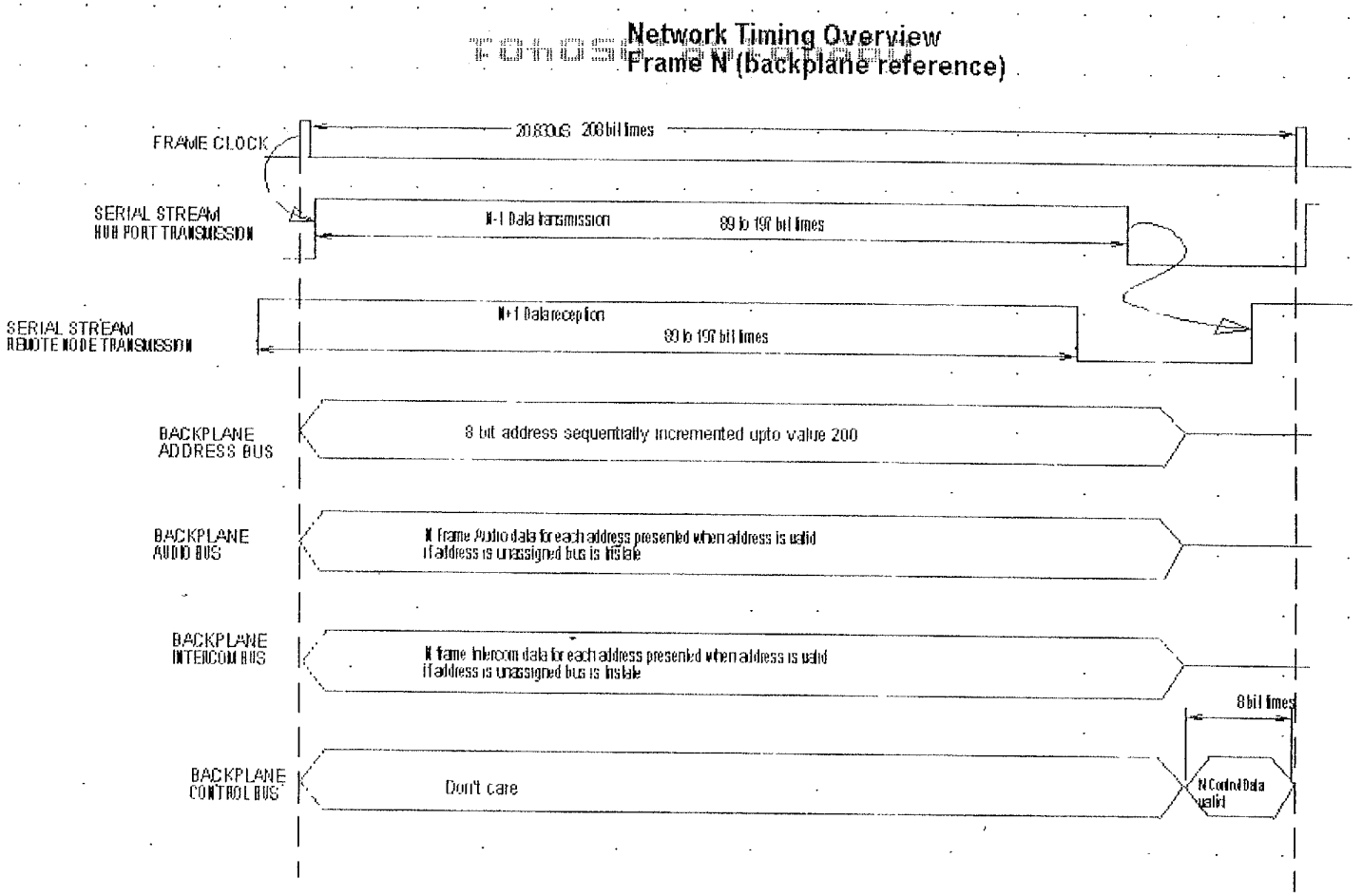


Fig. 4A

Preamble	CBS	Hub control	Data	Icom	Left audio 1	Right audio 1	Left audio 2	Right audio 2	Left audio 3	Right audio 3	Left audio 4	Right audio 4
AAAAABh	cbs	HC7 . HC0	D7 D0	I11 I0	A1L17. A1L0	A1R17 .. A1R0	A1217 A2L0	A2R17 A2R0	A3L17 A3L0	A3R17 A3R0	A4L17... A4L0	A4R17... A4R0

Fig. 4B

Translated Scanned

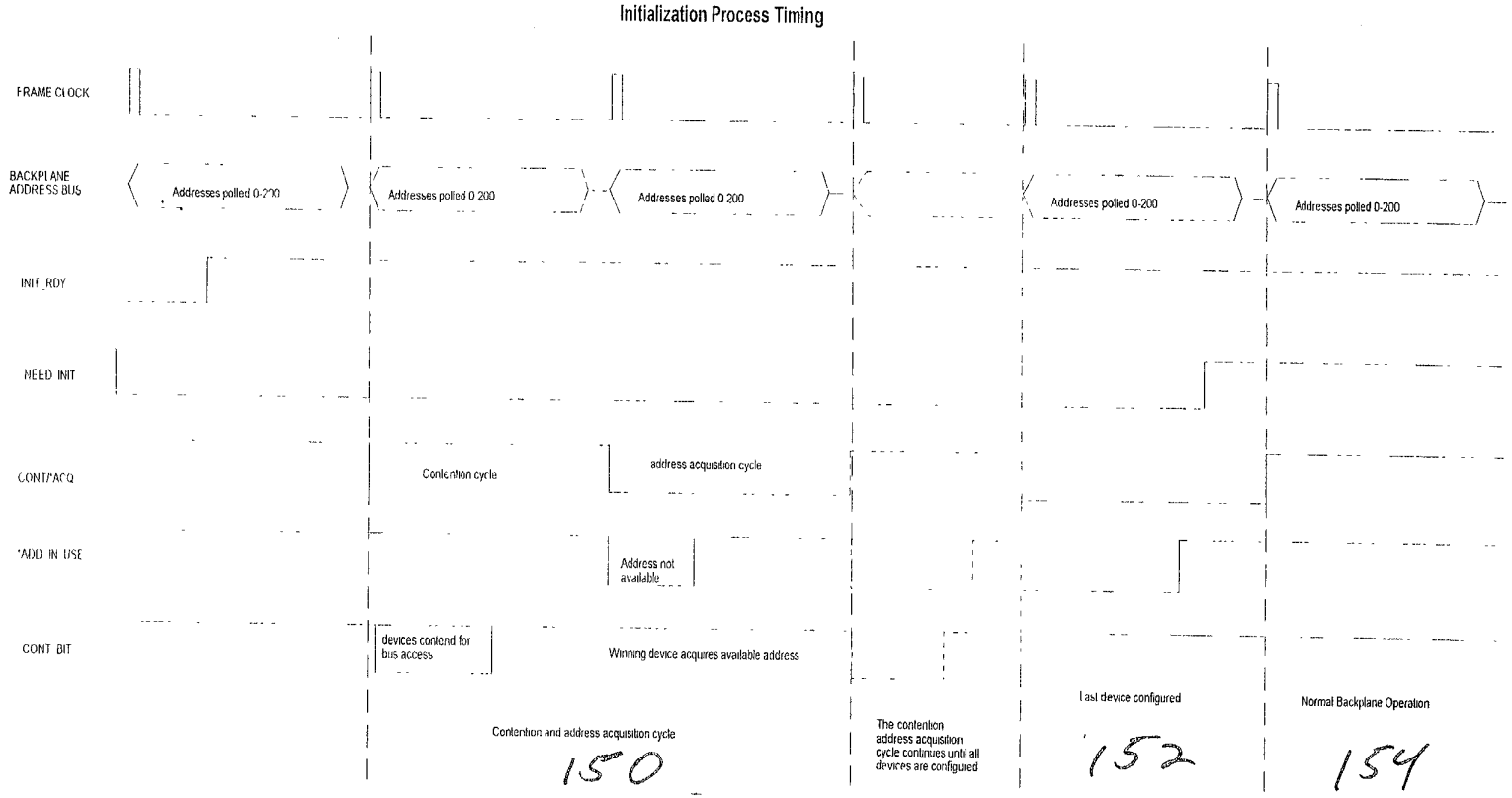


Fig. 5

Tomoso Setsuko

Mediatoo Initialization Process

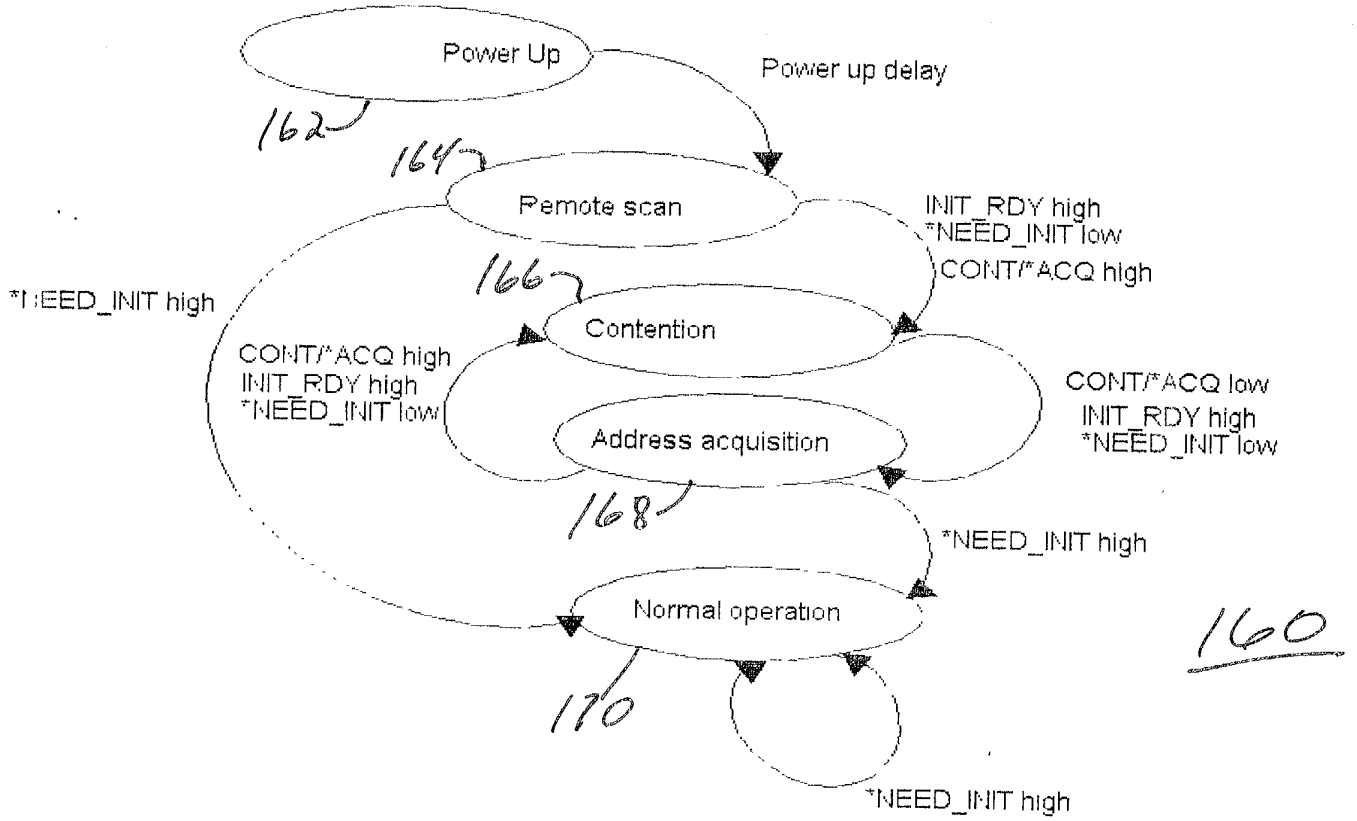


Fig. 6

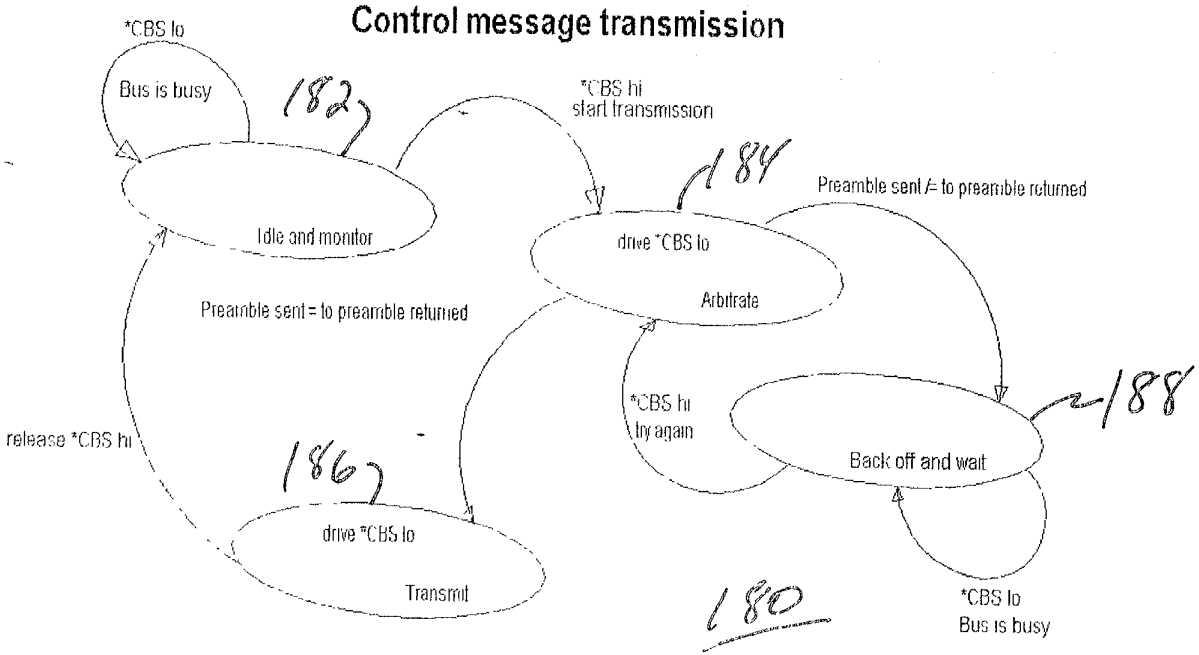


Fig. 7A

Preamble	Destination address	Source address	Number of Bytes in Payload	Payload	Checksum	
10 bytes	1 byte	1 byte	2 bytes	0-65Kbytes	2 bytes	

Fig. 7B

Tomoso Otsuka

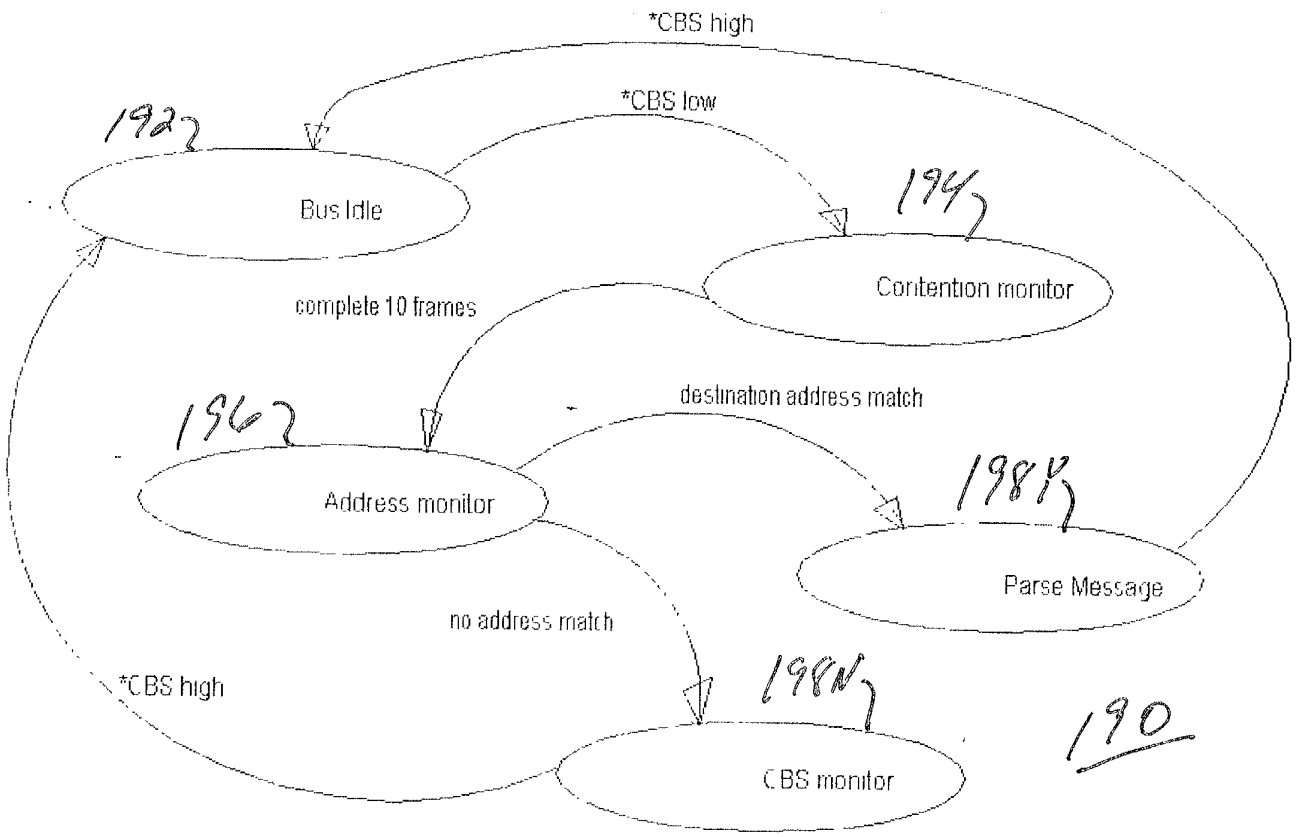
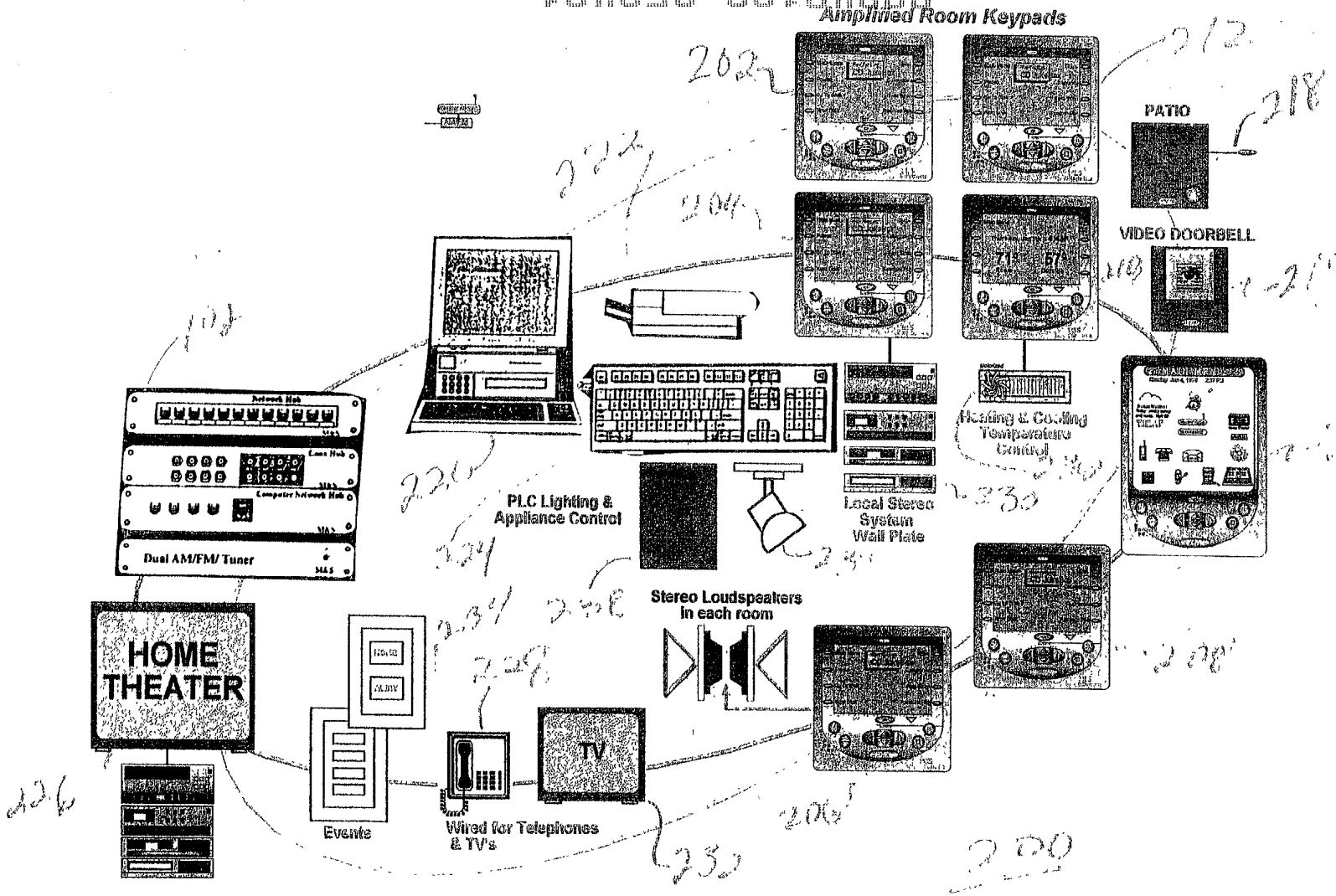


Fig. 8


Amplified Room Keypads
PATIO
VIDEO DOORBELL
Heating & Cooling Temperature Control
PLC Lighting & Appliance Control
Local Stereo System Wall Plate
Stereo Loudspeakers in each room
Dual AM/FM/ Tuner
HOME THEATER
TV
Events
Wired for Telephones & TV's

Patent Attorney

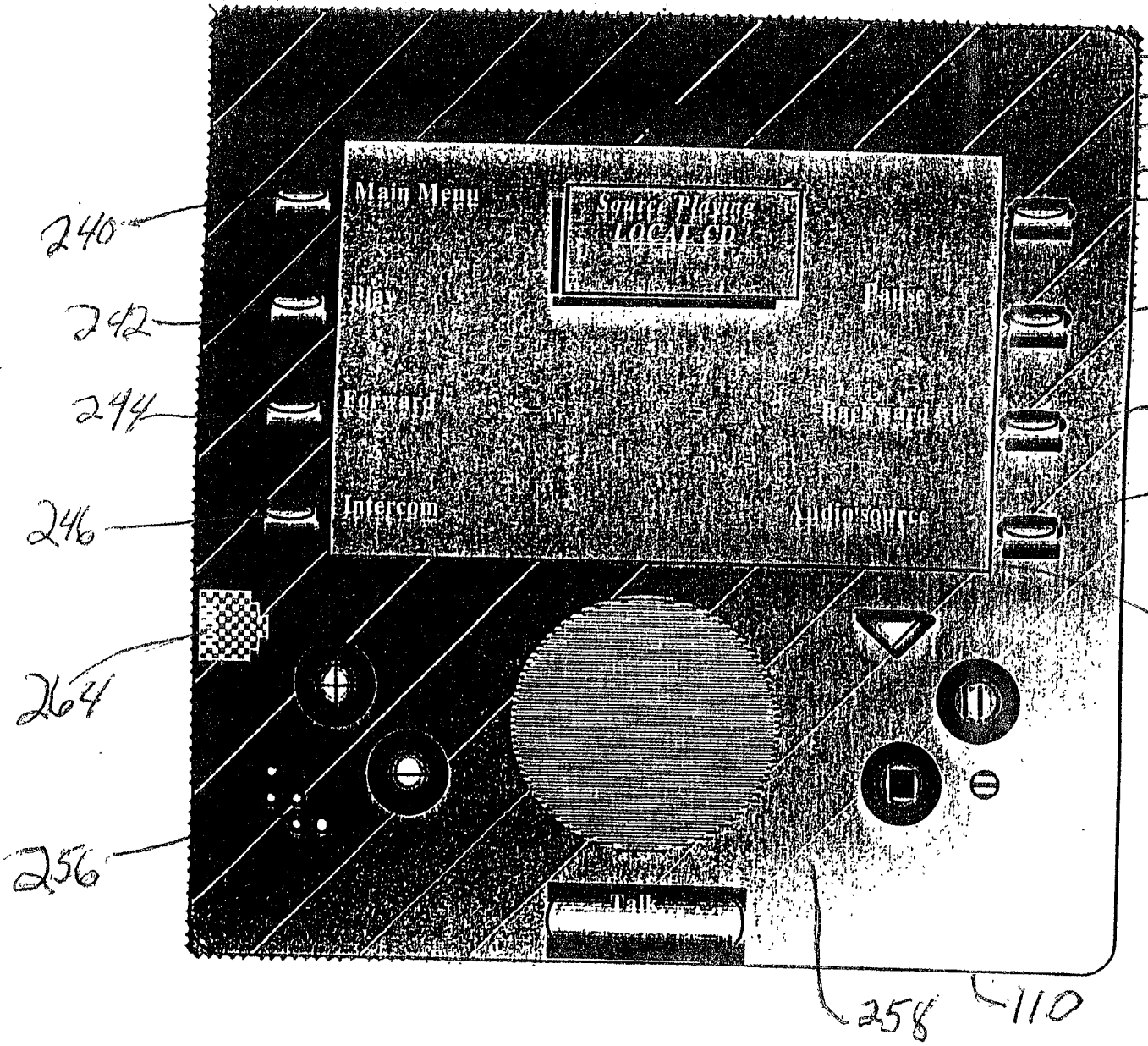


FIG. 10

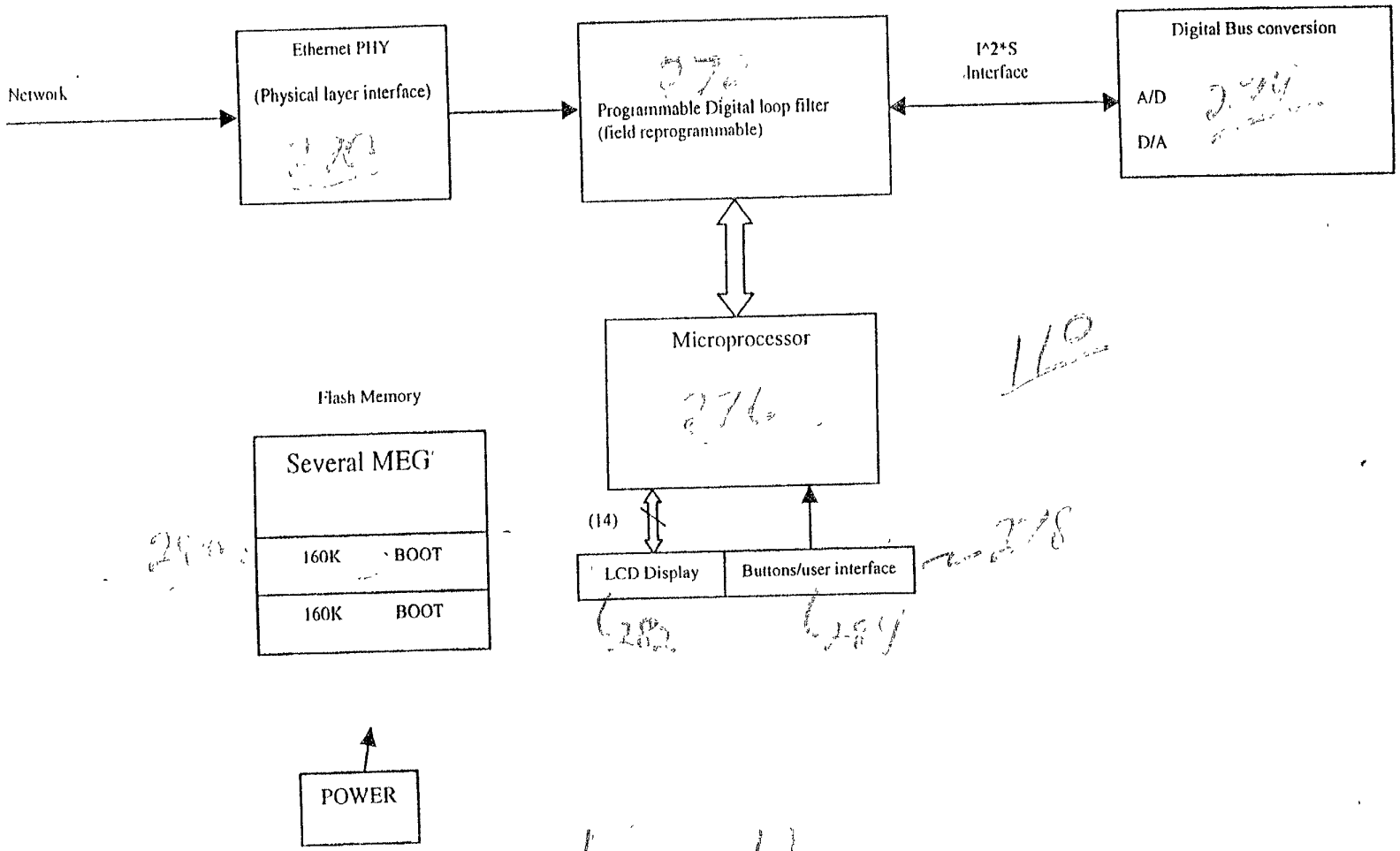

Network
Ethernet PHY
(Physical layer interface)
Programmable Digital loop filter
(field reprogrammable)
I^2*S
Interface
Digital Bus conversion
A/D
D/A
Microprocessor
Flash Memory
Several MEG
160K BOOT
160K BOOT
(14)
LCD Display
Buttons/user interface
POWER

Fig. 11

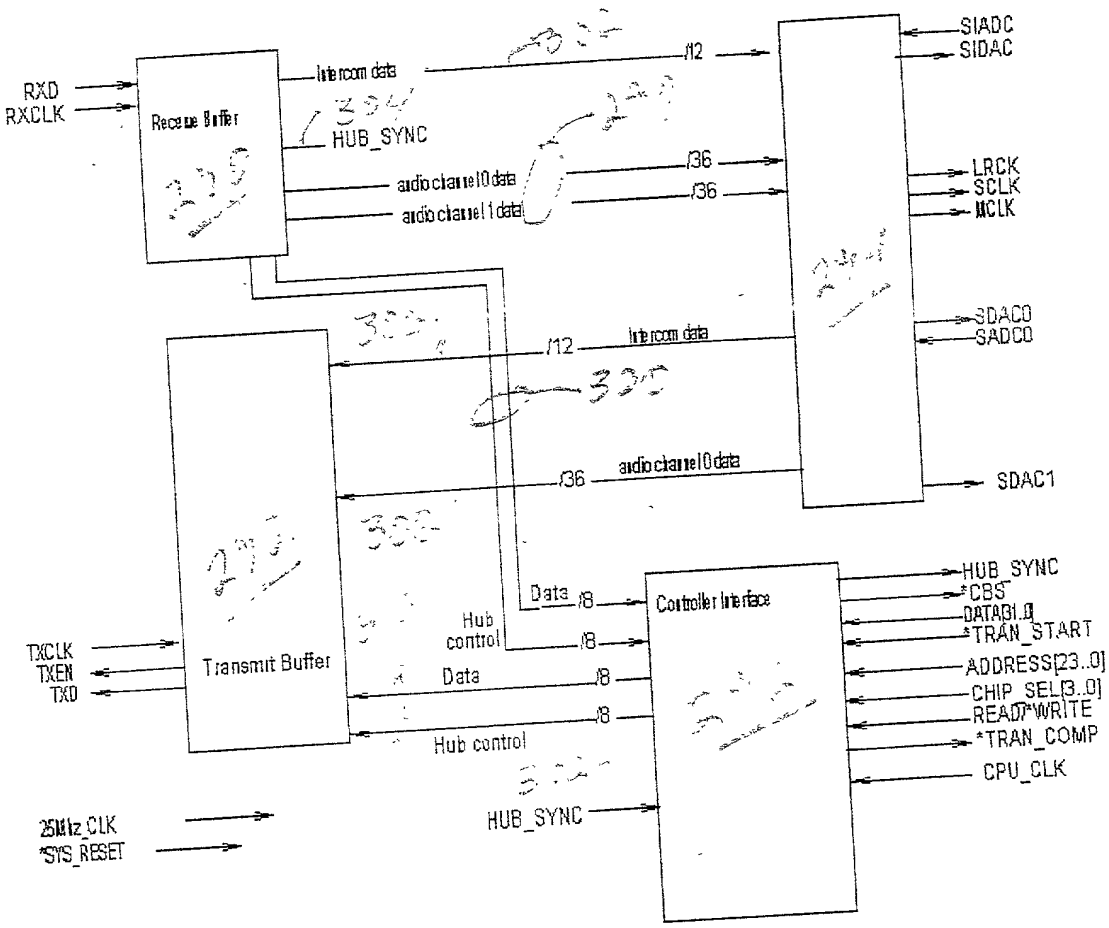

RXD
RXCLK
Receive Buffer
Intercom data
HUB_SYNC
audio channel 0 data
audio channel 1 data
/12
/36
/36
SIADC
SIDAC
LRCK
SCLK
MCLK
SDAC0
SADC0
SDAC1
/12
Intercom data
/36
audio channel 0 data
TXCLK
TXEN
TXD
Transmit Buffer
Hub control
Data
/8
/8
Data
/8
/8
Hub control
Controller Interface
HUB_SYNC
*CBS
DATA[1..0]
*TRAN_START
ADDRESS[23..0]
CHIP_SEL[3..0]
READ/*WRITE
*TRAN_COMP
CPU_CLK
25Mhz_CLK
*SYS_RESET
HUB_SYNC

Fig. 1a